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11/0

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/787,234	02/27/2004	In-Kwang Yu	8071-127T (OPP 040003-US)	4801
7590 11/01/2006 F. Chau & Associates, LLC 130 Woodbury Road Woodbury, NY 11797			EXAMINER CHEN, WEN YING PATTY	
			ART UNIT 2871	PAPER NUMBER

DATE MAILED: 11/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

Response to Amendment

Applicant's Amendment filed on Aug. 14, 2006 has been received and entered. Claims 22-26 are newly added per the Amendment filed. Therefore, claims 1-9, 11-12, 16-20 and 22-26 are now pending in the current application.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-9, 11-12, 16-20 and 22-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The term "dents" in claims 1-9, 11-12, 16-20 and 22-26 is used by the claim to mean "conductive particles", while the accepted meaning is "A depression in a surface made by pressure or a blow." The term is indefinite because the specification does not clearly redefine the term.

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For the purpose of examination, the Examiner will treat “detecting dents generated by the compression” as “to inspect the conductive particles post compression”.

Claim Objections

Claim 11 is objected to because of the following informalities: Claim 11 recites the limitation of “wherein one of the sub-units of the bonding inspection unit is incorporated into the printed circuit bonding unit and the other of the sub-units of the bonding inspection unit is incorporated into the PCB bonding unit”, which lacks antecedent basis. The two sub-units for inspection are first mentioned in claim 22, therefore, for the purpose of examination, claim 11 will be treated as though depending on claim 22 instead of claim 1. Appropriate correction is required.

Claims 18 and 19 are objected to because of the following informalities: Claims 18 and 19 recites the same limitations as set forth in claim 12, in which claims 18 and 19 depend from. Therefore, claims 18 and 19 are deemed redundant with respect to claim 12. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-6, 8-9, 11-12, 16-19 and 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa et al. (US 6414741) in view of Sugimoto et al. (US 5777610) further in view of Sekiguchi (US 2004/0046909).

With respect to claims 1 (Amended), 4-6, 12 (Amended), 18-19 and 22-25 (New):

Hasegawa et al. disclose a system and method of manufacturing a liquid crystal display comprising:

a panel manufacturing unit for manufacturing a liquid crystal panel assembly including a thin film transistor (TFT) (Fig. 1, element 12) and a liquid crystal layer interposed between the TFT array panel and the opposing array panel (Column 4, lines 22-27);

a printed circuit film bonding unit (Fig. 1, element 22) that bonds by thermocompression a printed circuit film on the panel assembly with an anisotropic conductive film (ACF) containing a plurality of conductive particles (Column 4, lines 22-42 and Column 7, lines 43-49); and

an inspection unit (Fig. 9, element 104) for inspecting the bonding of the printed circuit film on the panel assembly, wherein the bonding inspection unit comprises two sub-units for inspection before and after the bonding of the PCB, respectively (Column 6, lines 56-67, Column

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7, lines 1-67, Column 8, lines 1-62 and Column 12, lines 6-11; wherein the dummy lead wires and the aligning marks are provided for inspection of the bonding of the PCB, before and after bonding), and detects dents generated by the compression (Column 7, lines 60-67; wherein the shape or state of the conductive particles after thermo compression bonding is observed).

However, Hasegawa et al. fail to specifically disclose that the inspection of the bonding is performed specifically at locations between the gate pads of the TFT array panel and the leads on the printed circuit film in addition to the locations of the alignment marks and that the opposing array substrate is of a color filter array panel and that the wire board is specifically a printed circuit board (PCB).

Sugimoto et al. teach in Column 17 lines 26-40 that inspection of the bonding is performed at locations between the gate pads of the TFT array panel and the leads on the printed circuit film and Sekiguchi, on the other hand, discloses a liquid crystal display panel comprising a color filter array panel (Paragraph 0137). Furthermore, Sekiguchi discloses the use of a printed circuit board (PCB), which is also a wiring board, bonding unit for bonding a PCB to the printed circuit film (Paragraph 0144).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to manufacture a liquid crystal panel with a color filter array panel and bonding the printed circuit film to a printed circuit board as taught by Sekiguchi with the system and method of manufacturing of the liquid crystal panel taught by Hasegawa et al., since Sekiguchi teaches that the use of PCB enables the application of signals to the driving ICs of the display panel having the same function as the wiring board (Paragraph 0144) and that the color filter array panel provides coloring to the display panel and wherein the bonding of the printed

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circuit film with the gate pads of the TFT array panel is inspected as taught by Sugimoto et al., since Sugimoto et al. teach that by inspecting the bonding conditions of the printed circuit film with the TFT array terminals allows immediate repair of connection failure thus helps in obtaining a reliable connection (Column 17, lines 41-47).

As to claim 2: Hasegawa et al. further disclose that the printed circuit film comprises a tape carrier package (Column 4, line 38).

As to claim 3: Hasegawa et al. further disclose that the inspection unit comprises a CCD camera (Fig. 9, element 104).

As to claim 8: Hasegawa et al. further disclose that the inspection unit detects alignment of the printed circuit film with the panel assembly (Column 6, lines 56-67).

As to claim 9: Hasegawa et al. further disclose that the bonding inspection unit is incorporated into the printed circuit film bonding unit (Column 6, lines 56-67; Fig. 7, elements 114 and 117; wherein the inspection unit comprises of the dummy lead wires and the branch wires).

As to claim 11: Hasegawa et al. further disclose that the bonding inspection unit wherein one of the sub-units of the bonding inspection unit is incorporated into the printed circuit film bonding unit and the other of the sub-units of the bonding inspection unit is incorporated into the wiring board bonding unit (Column 6, lines 56-67 and Column 8, lines 45-54; wherein the dummy lead wires are incorporated into the printed circuit film bonding unit for before bonding of the wire board inspection and the aligning marks are incorporated into the wire board bonding unit for post bonding of the wire board inspection).

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As to claim 16: Hasegawa et al. further disclose that the printed circuit film comprises a tape carrier package (Column 4, line 38).

As to claim 17: Hasegawa et al. further disclose that the inspection unit comprises a CCD camera (Fig. 9, element 104).

As to claim 26 (New): Hasegawa et al. further disclose in Column 7 lines 43-49 that the method further comprising applying the anisotropic conductive film on the panel assembly before bonding a printed circuit film on the panel assembly, pre-curing the anisotropic conductive film by using a pre-heating head, and pre-pressing the printed circuit film on the anisotropic conductive film.

Allowable Subject Matter

Claims 7 and 20 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Hasegawa et al. disclose in Column 7 lines 60-67 that when inspecting the compression bonding, the shape or state of the conductive particles and in particular to what extent the conductive particles are crushed and two-dimensionally spread out along the substrate face is observed. However, either alone or in combination, Hasegawa et al. fail to disclose that the inspection of the dent number uniformity is performed, wherein the dent number is the number of conductive particles between gate pads and the TFT array panel and leads on the printed circuit film.

Therefore, claims 7 and 20 are allowable over the prior arts.

Response to Arguments

Applicant's arguments with respect to all claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to W. Patty Chen whose telephone number is (571)272-8444. The examiner can normally be reached on 8:00-5:00 M-F.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Nelms can be reached on (571)272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

W. Patty Chen
Examiner
Art Unit 2871

WPC
10/23/06


ANDREW SCHECHTER
PRIMARY EXAMINER